WETLAND ENHANCEMENT

(Acre)
Code 659

Natural Resources Conservation Service
Conservation Practice Standard

I. Definition

The modification of an existing wetland, where specific functions and/or values are modified for the purpose of meeting specific project objectives.

II. Purpose

Modify the hydrologic condition, hydrophytic plant communities, and/or other biological habitat components of a wetland for the purpose of favoring specific wetland functions or values.

III. Conditions Where Practice Applies

This practice applies on any existing wetland where the objective is to specifically enhance a selected wetland function(s) and/or value(s). Examples include: managing site hydrology for waterfowl or amphibian use, or managing plant community composition to favor native plants.

This practice does not apply to unique wetlands such as calcareous fens, bogs, or coastal lakeplain prairies and dune/swale complexes.

Upon completion of the enhancement, the site will meet the current NRCS criteria for wetland soils, hydrology, and vegetation.

This practice does not apply to:

- NRCS Field Office Technical Guide (FOTG), Section IV, Standard 656, Constructed Wetland, intended to treat point and non-point sources of water pollution;
- Standard 657, Wetland Restoration, intended to rehabilitate a degraded wetland where the soils, hydrology, vegetative community, and biological habitat are returned to original conditions; or
- Standard 658, Wetland Creation, for creating a wetland on a site location which historically was not a wetland.

IV. Federal, State, and Local Laws

Users of this standard should be aware of potentially applicable federal, state, and local laws, rules, regulations, or permit requirements governing wetland enhancement. This standard does not contain the text of federal, state, or local laws.

V. Criteria

A. General Criteria

1. The landowner shall obtain all necessary local, state and federal permits prior to the installation of this practice.
2. Enhanced wetlands will only be located where the soils, hydrology and vegetation meet the NRCS criteria for a wetland.
3. Document the soil, hydrology and vegetative characteristics of the site before alteration.
4. Complete the Wetland Planning Checklist, Appendix A, Chapter 13, NRCS Engineering Field Handbook.
5. The potential for occurrence of threatened or endangered species shall be evaluated for each site proposed for enhancement. Sites containing threatened or endangered species will not be enhanced under this standard unless it can be demonstrated that the impact will benefit the species at risk.
6. If the presence of hazardous waste materials in the sediment or fill is suspected, soil samples will be collected and analyzed for the presence of hazardous waste as defined by local, state, or federal authorities. Sites containing hazardous waste will not be enhanced under this standard.
7. The effect of any modification to the existing surface and/or subsurface drainage system on upstream and downstream landowners shall be evaluated. Upstream

surface and subsurface drainage shall not be impacted unless appropriate permissions are obtained or mitigation measures are implemented. All applicable state and local laws and regulations pertaining to flooding, surface and subsurface drainage will be followed.

8. Excessive nutrient, pesticide, or other pollutant inflows shall be controlled prior to site work. Examples of excessive inflows include direct runoff from a feedlot or other obvious pollution source, an actively eroding gully emptying into the site, or a poorly treated watershed that is contributing sediment and its associated pollutants.

B. Hydric Soil Condition

Enhancement sites will be located on hydric soils. If the hydric soil is excavated to improve wetland hydrology, hydric soil will be stock piled and reapplied over the area to a minimum depth of 4 inches.

C. Wetland Hydrology

The hydrology of the site is defined as the rate and timing of inflow and outflow, source, duration, frequency, and depth of flooding, ponding or saturation.

Wetland hydrology will be created to support the wetland type being established and the wetland function(s) to be enhanced.

If embankments, water control structures, surface or subsurface drainage manipulation, or grade stabilization structures are required, use NRCS FOTG Standards 657, Wetland Restoration, or 587, Structure For Water Control.

D. Hydrophytic Vegetation

Native vegetation will be established for the wetland type(s) being created. Soils and site condition will dictate what vegetation is appropriate. Planting rates and species will be based on Wisconsin Agronomy Technical Note 5.

Preference is given to top-dressing at least 50% of the site with soil containing a seed bank of desired native species to a minimum depth of 4 inches. If natural colonization of native species will realistically dominate within 5 years, then natural regeneration can be left to occur without top-dressing.

E. Wetland Functions

Wetland goals and objectives should include targeted wetland functions for the enhanced wetland. When possible, wetland functions not targeted for enhancement should also be maximized.

A functional assessment shall be performed on the site prior to creation using the Hydrogeomorphic (HGM) approach, as identified in the National Food Security Act Manual, or similar method.

Compare the wetland functions and values that will be gained or improved with those that will be maintained or adversely impacted.

See NRCS FOTG Standards 644, Wetland Wildlife Habitat Management, or 646, Shallow Water Management.

VI. Considerations

Additional recommendations relating to design that may enhance the use of, or avoid problems with, this practice but are not required to ensure its basic conservation functions are as follows.

A. Consider applying this practice adjacent to existing wetlands to increase wetland system complexity and diversity, decrease habitat fragmentation, and ensure colonization of the site by wetland flora and fauna.

B. Consider linking wetlands by corridors to enhance the wetland's use and colonization by wetland flora and fauna.

C. Consider adverse effects on downstream flows or aquifers that would impact other water uses or users.

D. Consider nutrients, pesticides, and other pollutants contained in surface and ground water, as well as accumulated sediments, that may have an adverse effect on wetland vegetation. The nutrient and pesticide tolerance of the species planned along with the wetland objectives should be considered where known nutrient and pesticide contamination exists.

E. Consider the need for buffer practices beneficial to wildlife around the perimeter of the site. Plan

practices such as NRCS FOTG Standards 393, Filter Strip; 386, Field Border; and/or 327, Conservation Cover to create a vegetative buffer between the management unit and adjacent land uses. This buffer should be at least 30 feet wide, or wider, depending on its purpose.

F. Consider Wisconsin Biology Technical Note 2, Microtopography Development, on nearly level sites to create a greater diversity of water depths and vegetative communities.

G. Consider use of these areas by reptiles and amphibians. Stacked logs and/or rock piles may be located near the water's edge to provide critical habitat for local reptile and amphibian species.

VII. Plans and Specifications

Plans and specifications for this practice shall be prepared for each site. Plans and specifications shall be recorded using approved specification sheets, job sheets, technical notes, narrative documentation in the conservation plan, or other acceptable documentation.

Plans and specifications for installing structures for water control shall be in keeping with this standard and shall prescribe the requirements for applying the practice to achieve its intended purpose. The plan shall specify the location, grades, dimensions, materials, hydraulic and structural requirements for the individual structure, and the timing or sequence of installation activities. Provisions must be made for necessary maintenance.

NRCS staff is encouraged to work closely with the NRCS Biologists, WDNR Wildlife Managers, or other wetland specialists in developing site specific plans and specifications.

VIII. Operation and Maintenance

An operation and maintenance plan will be prepared for each wetland enhancement site.

A plan for the operation, maintenance, and management of the area shall be developed and recorded using approved job sheets, technical notes, or other forms of acceptable documentation.

The plan shall include monitoring and management of the overall site, as well as structural and vegetative measures. The area should be reviewed annually to see if adjustments are needed in any water/vegetation plan.

Repair and upkeep of the practice (maintenance) shall be carried out as needed, such as repair or replacement of vegetative or structural components.

The following activities will be addressed in the plan:

A. Timing and level setting of water control structures required for establishment of desired hydrologic conditions or for management of vegetation.

B. Inspection schedule of embankments and structures for damage assessment.

C. Depth of sediment accumulation allowed before removal is required

D. Management needed to maintain vegetation, including control of unwanted vegetation.

E. Acceptable uses and timing (e.g. grazing and haying).

Biological control of undesirable plant species and pests (e.g., using predator or parasitic species) shall be implemented where available and feasible.

IX. References

USDA, NRCS Wisconsin Field Office Technical Guide (FOTG), Section IV, Practice Standards and Specifications.

USDA, National Food Security Act Manual (NFSAM).

USDA, NRCS National Engineering Handbook, Part 650, Engineering Field Handbook.

USDA, NRCS Wisconsin Agronomy Technical Note 5.

USDA, NRCS Wisconsin Biology Technical Note 2.